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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/523,105

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John Claude Husband

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EXAMINER

PAK, HANNAH J

ART UNIT

PAPER NUMBER

4171

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/523,105	Applicant(s) HUSBAND ET AL.	
	Examiner Hannah Pak	Art Unit 4171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-78 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 39-78 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/23/05, 02/03/05, 05/22/08</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 39-66 and 73-77 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear what is included by the claimed “sub-effective amount.” The specification does not provide any guidance to determine its meaning.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 39-40, 43 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Suau et al. (US 2003/0045647).

The applicant claims a method of grinding an inorganic particulate material in an aqueous suspension with at least one dispersant.

As to claims 39-40, 43, and 48, Suau et al. disclose grinding mineral particles, including calcium carbonate, in aqueous suspensions containing dispersing agents (dispersants), such as acrylates (Paragraphs 2, 3, and 15). About 0.3-1.0% by dry weight of the mineral particles is preferably employed in the aqueous suspension (Paragraph 11).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 39-49 and 51-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mortimer et al. (US 6,620,856) in view of Engraz et al. (US 5,432,239).

The applicant claims a method of grinding an inorganic particulate material in an aqueous suspension with at least one dispersant.

With respect to claims 39-40, 43, and 67-69, Mortimer et al. disclose preparing an aqueous suspension containing a particulate alkaline earth metal carbonate having a solids content of not more than 40% by weight by grinding the carbonate in a dilute aqueous suspension (Col. 2, lines 1-5, and Col. 2, line 66-Col. 3, line 6). One example of the particulate alkaline earth metal carbonates used is calcium carbonate (Col. 2, lines 61-65).

As to claims 51-53 and 58, Mortimer et al. also disclose dewatering the dilute aqueous suspension to form a carbonate suspension having a solid content in the range, 45% to about 65% by weight (Col. 2, lines 5-11 and 61-65). The dewatered suspension is mixed with a dispersing agent (Col. 2, lines 12-15). More dispersing agent can also be added later in one or more doses to the suspension (Col. 2, lines 24-30).

As to claims 44-49, Mortimer et al. also disclose that it is preferable to use sodium polyacrylate and a polyphosphate (polymetaphosphate) dispersants in the aqueous suspension (Col. 3, lines 49-67). Mortimer et al. further teach the total effective (dry) amount of the dispersing agent used is in the range from 0.02% to 2.0% by weight, based on the dry weight of the carbonate present (Col. 4, lines 1-5), which is inclusive of all the claimed ranges.

Mortimer et al. do not teach kaolin (hydrous kandite clays) as an inorganic particulate material as recited in claims 41-42 and the calcium carbonate particles or kaolin particles in the aqueous suspension used in various applications as required by

claims 60-66 and 73-77. Mortimer et al. also do not mention the specific amounts of the materials claimed and steepness factors.

However, Engraz et al. teach kaolin (hydrous kandite clays), like calcium carbonate, can be grinded in an aqueous suspension (Col. 1, lines 20-28). Engraz et al. also teach it is conventional to employ calcium carbonate and kaolin (hydrous kandite clays) particles for the preparation of industrial products (Col. 1, lines 15-39). Engraz et al. exemplify paints, pigments for paper coating, fillers for rubbers, and synthetic resins, but do not exclude other industrial products, including ceramics, plastics, films and sealants (Col. 1, lines 15-20 and lines 30-39). Fillers are known to coat a surface or to give solidity, bulk, etc., to a substance, such as paper or a chemical powder (see dictionary online). Moreover, the applicants admit that the obtained particulate material may be used as a coating or filler for a wide variety of applications, including plastics, films, sealants or mastics, and ceramics (Pages 8-9 of specification).

Therefore, it would have been obvious to one of ordinary skill in the art to employ calcium carbonate and kaolin (hydrous kandite clay) particles as fillers or pigments in various industrial products, including those recited in claims 60-66 and 73-77.

As to claims 53 and 58, Mortimer et al. disclose the amount of solid contents, which overlap with the claimed ranges. Therefore, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the invention was made, since it has been held that choosing the overlapping portion, of the range taught by Mortimer et al. and the range claimed by the applicant, has been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 USPQ 549.

With respect to claims 54-57, Mortimer et al. teach calcium carbonate in the aqueous suspension having an equivalent spherical diameter (Col. 6, lines 45-47), and according to page 2 of the specification, a steepness factor is defined as the ratio of the d_{30} equivalent spherical diameter (at which 30% of the particles are finer) to d_{70} (at which 70% of the particles are finer) equivalent spherical diameter. Therefore, selection of optimal proportion of the steepness factor of the calcium carbonate in the aqueous suspension is well within the skill of one ordinary in the art (*see MPEP § 2144.05*).

Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mortimer et al. (US 6,620,856) in view of Engraz et al. (US 5,432,239) as applied to 39-49 and 51-77 claims above, and further in view of Nagaraj et al. (US 2001/0022282).

The disclosures of Mortimer et al. and Engraz et al. are discussed above. They do not specifically mention using hexametaphosphate as a dispersant.

Nagaraj et al. disclose it is advantageous to employ hexametaphosphate as a dispersant to increase the dispersibility of the kaolin clay in water (Paragraph 15).

Therefore, it would have been obvious to one of ordinary skill in the art to employ hexametaphosphate of Nagaraj et al. as a dispersant to increase the dispersibility of the kaolin clay taught by Engraz et al. in the aqueous suspension of Mortimer et al.

Claim 78 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mortimer et al. (US 6,620,856) in view of Engraz et al. (US 5,432,239) as applied to claims 39-49 and 51-77 above, and further in view of Leighton et al. (US 4,915,845).

The disclosures of Mortimer et al. and Engraz et al. are discussed above. They do not mention using their dispersant as a corrosion inhibitor in the aqueous suspension of inorganic particulate material.

However, Leighton et al. teach dispersants having corrosion inhibition to maintain water contaminants in a dispersed state under a wide range of process conditions (Col. 1, lines 50-55).

Therefore, it would have been obvious to one of ordinary skill in the art to employ dispersants having corrosion inhibition as taught by Leighton et al. in the aqueous suspension disclosed by Mortimer et al. and Engraz et al. to maintain water contaminants in a dispersed state under a wide range of process conditions.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hannah Pak whose telephone number is (571) 270-5456. The examiner can normally be reached on Monday - alternating Fridays (7:30 am - 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 4171

Hannah Pak
Examiner
Art Unit 4171

/HP/